ENVIRONMENTAL ASSESSMENT

Medical Facility Parking Complex

DOVER AIR FORCE BASE, DELAWARE

FINAL

September 2006

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14. ABSTRACT

The Medical Group, Medical Support Squadron at Dover Air Force Base, Delaware (Dover AFB) proposes to construct additional parking spaces, new access roads, exterior security lighting, and sidewalks for the Medical Group Campus Plan that incorporates a Medical Facility Parking Complex. The hospital and dental clinic comprise the medical facilities at Dover AFB. The 2005 Base Realignment and Closure Commission Report proposed increases in personnel and support at Dover AFB, necessitating additional parking and access to the facilities. This EA assesses the potential impacts associated with the Proposed Action to construct new parking lots, access roads, and associated facilities; Alternative 1 to reduce wetland impacts by constructing discontinuous parking lots; and the No Action Alternative. Resources evaluated include air quality, transportation, water resources including wetlands, geology and soils socioeconomics and environmental justice, and hazardous materials and wastes. Direct and indirect effects were assessed for each environmental resource or issue, considering short-term and long-term project effects and cumulative impacts. Although construction activities would affect the natural and human environment, most impacts would be temporary and minor. Implementing the Proposed Action would impact 0.3 acre of wetlands; Alternative 1 would impact 0.09 acre of wetlands. Prior to the action, Dover AFB would coordinate with the Philadelphia District, Regulatory Office and get an approved wetland permit. No cumulative impacts to resources or issues would be expected from implementation of the action.

15. SUBJECT TERMS

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FINDING OF NO SIGNIFICANT IMPACT
FINDING OF NO PRACTICABLE ALTERNATIVE

Environmental Assessment
Medical Facility Parking Complex
Dover Air Force Base, Delaware

Background

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The purpose of the action is to provide sufficient parking for hospital patrons and to improve traffic flow in the area. The need for the action is to comply with the Department of Defense (DoD) Unified Facilities Criteria (UFC) 4-510-01, Design: Medical Military Facilities (DoD 2003) regarding authorized parking spaces and UFC 3-210-02, Design: Personally Owned Vehicles (POV) Site Circulation and Parking (DoD 2004) regarding parking lot design and vehicular circulation. The existing number of parking spaces (approximately 320) is insufficient according to an assessment conducted in 2004 by the Savannah District, U.S. Army Corps of Engineers (USACE) for the U.S. Air Force Health Facilities Office Eastern Region. The Savannah District identified a requirement of 443 parking spaces for the hospital and dental clinic.

Pursuant to the National Environmental Policy Act (NEPA), the Council of Environmental Quality (CEQ) implementing regulations, (40 CFR 1500-1508) and the Air Force Environmental Impact Analysis Process (32 CFR 989), the Air Force has prepared an Environmental Assessment (EA) analyzing the potential environmental impacts of the Proposed Action to construct new parking lots, access roads, and associated facilities. The EA evaluated potential impacts from the Proposed Action, Alternative 1, and No-Action alternative. Cumulative impacts were also evaluated.

Proposed Action

The Proposed Action is to develop additional parking spaces adjacent to the medical facilities and connect new access roads to the transportation network to improve traffic flow, and add sidewalks to provide safe paths for pedestrians using the new parking lot. Construction activities would cost approximately $2 million, begin in 2007, and continue for approximately four months. The Proposed Action would provide approximately 475 parking spaces, which would moderately exceed the minimum number of parking spaces identified by the Savannah District, USACE for the medical facilities parking complex.

Approximately 2,000 square feet of existing paved areas in the parking lots and access roads in the medical facilities parking complex would be demolished and resurfaced to construct four new vehicle entrances and exits connecting the parking lots to the existing road network. Approximately 1,000 square feet of pavements would also be demolished to install eight medians and parking islands in existing parking lots to direct traffic flow. Approximately 1,600 linear feet of new access road would be constructed to improve the traffic flow through the medical

facilities parking complex. Four new parking lots, approximately 58,000 square feet, would be constructed. The new parking lots and access roads would require multiple crossings of an existing drainage that bisects the project area and 0.3 acres (approximately 13,068 square feet) of wetland fill. This ditch is classified as a jurisdictional wetland by the U.S. Army Corps of Engineers (USACE). The ditch would be filled and culverts used to support access roads. The Proposed Action is impossible without crossing the ditch because there is no other open land in the vicinity of the hospital available for parking lot construction. Approximately 4,000 linear feet of concrete sidewalks would be constructed to facilitate movement of pedestrians throughout the medical facilities parking complex. In the existing lots, parking spaces would be re-painted to change from angled parking to perpendicular parking, which yields additional parking spaces and improves traffic flow by permitting two-way traffic in the parking areas.

Exterior security lighting would be installed in the project site to provide uniform lighting in the parking areas, access roads, and sidewalks. Approximately 40 light poles would be installed and connected to existing electrical utilities. Landscaping beds, trees, and shrubs would be installed in the medians, parking islands, and pedestrian walkway areas.

Prior to initiation of construction activities, plans and documents would be prepared by the contractor to provide environmental controls and implementation of best management practices (BMPs). These plans and documents would be submitted to the contracting officer at Dover AFB for review and approval.

Alternatives to the Proposed Action

Alternative 1 to the Proposed Action would include development of separate parking areas on the east and west sides of the drainage ditch that crosses the project site. This alternative would reduce the potential wetland impacts that would result from filling most of the drainage ditch designed for the Proposed Action. Under Alternative 1, access roads would cross the drainage ditch three times and approximately 3,920 square feet of the wetland would be filled to maintain the traffic flow. Approximately 445 parking spaces or 30 fewer than designed for the Proposed Action would be constructed. Under this alternative the ditch would remain open between the road crossings. Under this alternative, there would be approximately 4,300 fewer square feet of impervious surface constructed than for the Proposed Action. Implementation of this alternative would result in less efficient pedestrian access to the medical facility since patrons that park on the west side of the drainage ditch would follow an indirect route on roadside sidewalks to access the hospital and medical clinic.

The No Action Alternative has been carried forward as the baseline against which potential impacts arising from the action alternatives can be measured. Under the No Action Alternative, parking and pedestrian access to the hospital and dental clinic would be restricted to less than standard criteria specified for medical military facilities in UFC 4-510-01. Traffic flow would continue to be directed through parking areas to cross the medical facilities parking complex, which is also inconsistent with the standard criteria specified in UFC 3-210-02.

ENVIRONMENTAL IMPACTS

Potential effects from the implementation of the Proposed Action, including cumulative impacts are summarized below:

Air Quality

Implementation of the Proposed Action would have temporary, minor impacts to the local air quality. No significant cumulative impacts would be expected. Calculated emissions from the proposed construction activities would be below *de minimis* values for criteria pollutants. Therefore, the General Conformity Rule does not apply. The associated emissions would be considered insignificant and not affect the local air quality, therefore, a Record of Non-Applicability would be prepared for the action.

Transportation

Implementing the Proposed Action 1 would have short term, minor impacts on the roadway system at Dover AFB during construction activities. Traffic would need to be rerouted to avoid construction activities and may cause minor delays; however, the road network on Dover AFB is designed to handle temporary increases in traffic volumes and commercial traffic associated with the mission. The long-term benefits of the action include increased parking spaces for hospital and dental clinic patrons, and improved traffic flow through the medical facilities parking complex. Transportation systems off the base would not be impacted by the proposed construction activities; consequently, there would be no change to planning assumptions or recommended roadway improvements in the vicinity.

Water Resources

Implementing the Proposed Action would not impact groundwater resources because the proposed construction activities would not be conducted below three feet of the ground surface, well above the reported groundwater elevation in the vicinity. The action could result in minor impacts to water quality from surface water runoff following storm events during construction activities; however BMPs outlined in the Sediment and Stormwater Management Plan prepared for the action would be implemented to minimize impacts from erosion and sedimentation. No cumulative impacts would be expected.

Implementing the Proposed Action would result in filling and culverting approximately 0.3 acre of the wetland ditch. Prior to the action, Dover AFB would coordinate with the Philadelphia District, USACE Regulatory Office and get an approved wetland permit.

Geology and Soils

Implementing the Proposed Action would not significantly affect geologic features underlying Dover AFB. Ground disturbance would occur during construction on undeveloped land in the medical facility parking complex. Construction activities involving ground disturbances would include grading and clearing; however, disturbances would not occur at depths that could potentially impact aquifer recharge zones.

Under the Proposed Action soils would be disturbed during construction activities on approximately 3 acres of undeveloped land. However, BMPs would be implemented during construction to minimize impacts to soils associated with grading and clearing activities. Therefore, only temporary and minor impacts to soils would be expected and no cumulative impacts would be expected.

Socioeconomics and Environmental Justice

Implementing the Proposed Action would not result in significant impacts on the demographics, employment, or income potential in the region of influence (ROI). The ROI is not considered an

area with a concentrated minority population or poverty area; therefore, there are no environmental justice concerns. The economic benefits from construction activities would be minor and short-term compared to the regional economic generation and have no anticipated impacts to the social or economic characteristics of the ROI. No cumulative impacts would be expected

Hazardous Materials and Wastes

Implementing the Proposed Action could generate hazardous wastes and/or consume hazardous materials. The potential impacts would be short-term, approximately four months during construction activities. Most of the materials used in construction would typically be consumed in their entirety and very little waste generated for disposal. As a result, no large amounts of construction-related hazardous materials would be expected, and with no ERP or non-ERA sites identified near the proposed site there is not a high probability of finding large amounts of hazardous materials and waste. Any hazardous wastes generated during the activities would be disposed of in accordance with applicable federal, state, and local regulations.

There may be residual contaminants in the soil that may not allow for unrestricted disposal of excavated soils. These contaminants may include pesticides, such as chlordane and heptachlor, several semi-volatile organic compounds, and metals such as lead and chromium. Any excavated soil that is not suitable for use on site would be stockpiled on site and tested to determine proper disposal requirements. Each stockpile of soil would be analyzed for the following items:

Full TCLP (toxicity characteristic leachate procedure) to include ignitability, reactivity, corrosivity, metals, organics, pesticides and herbicides;
b. Total Petroleum Hydrocarbons (TPH);
c. Polychlorinated Biphenyls (PCBs);
d. BTEX (Benzene, Toluene, Xylene, and Ethyl benzene); and
e. Percent Solids.

The sample results would be submitted to Civil Engineering Squadron, Environmental (CES/CEV) for interpretation. CEV will use the hazardous waste limitations in the code of federal regulations when evaluating the TCLP results to determine if the soil must be disposed of as hazardous waste. The other remaining parameters are required for disposal at a Delaware Solid Waste Authority (DSWA) facility and have associated DSWA limitations. Those limitations will be compared to the results to determine if the soil can be disposed of within the State of Delaware, only if the soil is not a hazardous waste. If soil is hazardous waste, it would be disposed of accordingly at a disposal facility permitted to accept hazardous waste. If the soil is non-hazardous waste but does not meet the limitations of the DSWA, the soil would be disposed of at a disposal facility permitted to accept such waste.

No long-term impacts would be expected because use of hazardous materials and generation of hazardous wastes would cease after construction activities. Therefore, there would be no impacts from release of hazardous materials and wastes to the environment.

Irreversible and Irretrievable Commitment of Resources:

There would be no irretrievable commitment of resources from the Proposed Action. Use of fuel for operation of construction equipment and human labor represent the only irreversible commitment of resources.

FINDING OF NO SIGNIFICANT IMPACT

Based upon my review of the facts and analyses contained in the attached EA, I conclude that the Proposed Action will not have a significant environmental impact, either directly or cumulatively in conjunction with other projects at Dover AFB. Accordingly, the requirements of NEPA, CEQ regulations and the Air Force Environmental Impact Analysis Process are fulfilled and the preparation of an Environmental Impact Statement is not required.

FINDING OF NO PRACTICABLE ALTERNATIVE

Pursuant to Executive Order 11990, Protection of Wetlands, it is determined that there is no practicable alternative to the proposed new construction in wetlands and that the Proposed Action includes all practicable measures to minimize harm to wetlands that may result from such use. Compliance with the selection criteria for alternatives would not be possible without impacting the drainage ditch wetland that crosses the project site.

Signed:

JAMES S. BRACKETT, Colonel, USAF
Deputy Director, Installations &
Mission Support

26 DEC 2006
Date

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Environmental Assessment
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Signed:

_____

Leonard A. Patrick, Colonel, USAF
Director, Installations & Mission Support

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ENVIRONMENTAL ASSESSMENT
Medical Facility Parking Complex

DOVER AIR FORCE BASE, DELAWARE

Lead Agency: Department of the Air Force

Proposed Action: Construct in 2007 additional parking spaces, new access roads, exterior security lighting, and sidewalks to improve vehicular and pedestrian flow and provide needed additional parking in the medical facility complex at Dover Air Force Base.

Written comments and inquiries regarding this document should be directed to: Mr. Steven Seip, 436 CES/CEV, 600 Chevron Avenue, Dover Air Force Base, DE 19902-5600, (302) 677-6839.

Report Designation: Environmental Assessment (EA)

Abstract: The Medical Group, Medical Support Squadron at Dover Air Force Base, Delaware (Dover AFB) proposes to construct additional parking spaces, new access roads, exterior security lighting, and sidewalks for the Medical Group Campus Plan that incorporates a Medical Facility Parking Complex. The hospital and dental clinic comprise the medical facilities at Dover AFB. The 2005 Base Realignment and Closure Commission Report proposed increases in personnel and support at Dover AFB, necessitating additional parking and access to the facilities.

This EA assesses the potential impacts associated with the Proposed Action to construct new parking lots, access roads, and associated facilities; Alternative 1 to reduce wetland impacts by constructing discontinuous parking lots; and the No Action Alternative. Resources evaluated include air quality, transportation, water resources including wetlands, geology and soils, socioeconomics and environmental justice, and hazardous materials and wastes. Direct and indirect effects were assessed for each environmental resource or issue, considering short-term and long-term project effects and cumulative impacts. Although construction activities would affect the natural and human environment, most impacts would be temporary and minor. Implementing the Proposed Action would impact 0.3 acre of wetlands; Alternative 1 would impact 0.09 acre of wetlands. Prior to the action, Dover AFB would coordinate with the Philadelphia District, Regulatory Office and get an approved wetland permit. No cumulative impacts to resources or issues would be expected from implementation of the action.

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ACRONYMS AND ABBREVIATIONS

436 AW	436th Airlift Wing
AFB	Air Force Base
Air Force	United States Air Force
BEA	Bureau of Economic Analysis
BMPs	best management practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CES/CEV	Civil Engineering Squadron/Environmental
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
DNREC	Department of Natural Resources and Environmental Compliance
DSWA	Delaware Solid Waste Authority
DoD	Department of Defense
EA	environmental assessment
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ERP	Environmental Restoration Program
FONPA	finding of no practicable alternative
FONSI	finding of no significant impact
FY	fiscal year
MDG/MDSS	Medical Group, Medical Support Squadron
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_x	nitrous oxides
NPDES	National Pollutant Discharge and Elimination System
O_3	ozone
Pb	lead
PM_{10}	particulate matter measuring less than 10 microns in diameter
POV	personally owned vehicle
RCRA	Resource Conservation and Recovery Act
ROI	region of influence
SARA	Superfund Amendments and Reauthorization Act
SIP	State Implementation Plan
SO_2	sulfur dioxide
SR	State Route
UFC	Unified Facilities Criteria
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCB	U.S. Census Bureau
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

1.0 PURPOSE AND NEED FOR THE ACTION

1.1 Introduction and Background

The Medical Group, Medical Support Squadron (MDG/MDSS) at Dover Air Force Base, Delaware (Dover AFB) proposes to construct additional parking spaces, new access roads, exterior security lighting, and sidewalks for the Medical Group Campus Plan that incorporates a Medical Facility Parking Complex in 2007. The hospital and dental clinic comprise the medical facilities at Dover AFB. The 2005 Base Realignment and Closure Commission Report proposed increases in personnel and support at Dover AFB (Air Force 2005). This Environmental Assessment (EA) assesses the potential impacts associated with the action.

Since its beginning in 1941, Dover AFB has expanded its airlift mission capabilities and is the first all C-5 Galaxy equipped air wing in the Air Force. Dover AFB is in Kent County, Delaware (Figure 1-1). The host unit is the 436 Airlift Wing (436 AW), which provides command and control, and associated support functions to airmen and aircraft conducting a global airlift mission. Aircraft and aircrews assigned to Dover AFB provide worldwide movement of cargo and personnel on time-sensitive airlift missions. Aircraft assigned to Dover AFB comprise approximately 25 percent of the airlift capability of the U.S. Air Force (Lauria 2003).

Dover AFB is the largest and busiest aerial port in the Department of Defense (DoD) and houses the only joint services mortuary on the East Coast. Dover AFB employs approximately 6,600 civilian and military personnel. Dover AFB has an economic impact greater than $470 million annually on the Delaware economy and is considered Delaware's third largest industry (City of Dover 2003).

1.2 Past, Present, and Reasonably Foreseeable Actions

Planned activities for fiscal year (FY) 2005 included the demolition of approximately 502,893 square feet and the construction of 373,292 square feet of buildings and impervious surfaces. Approximately 56,104 square feet of construction is programmed for FY 06 and at least 3,200 square feet of construction is programmed for FY 07 through FY 10 (Dover AFB 2005a). Cumulative effects of past, present, and future actions were considered in the scoping process for the Proposed Action to avoid long-term impacts to the natural and man-made environments.

Figure 1-1. General Location of Dover Air Force Base.

1.3 Purpose and Need for the Proposed Action

The purpose of the action is to provide sufficient parking for hospital patrons and staff and to improve traffic flow in the area. The existing parking areas and roads would be redesigned to increase the number of parking spaces and provide a more efficient traffic pattern through the medical facility complex. In addition, exterior lighting and sidewalks would be installed to increase the security for hospital patrons.

The need for the action is to comply with the DoD Unified Facilities Criteria (UFC) 4-510-01, Design: Medical Military Facilities (DoD 2003) regarding authorized parking spaces and UFC 3-210-02, Design: personally owned vehicle (POV) Site Circulation and Parking (DoD 2004) regarding parking lot design and vehicular circulation. Figure 1-2 shows approximately 320 parking spaces around the hospital (Building 300), which is insufficient according to an assessment conducted in 2004 by the Savannah District, U.S. Army Corps of Engineers (USACE) for the U.S. Air Force Health Facilities Office Eastern Region (Benner 2005a). The Savannah District identified a requirement of 443 parking spaces for the hospital and dental clinic. The UFCs provide guidance for designing parking areas and other facilities required for on-site vehicular circulation and stationing. This instruction sets guidelines for determining the size and layout to include grading, drainage and traffic circulation. The current traffic flow must pass through parking lots to navigate across the medical facilities parking complex, which is inefficient and poses a safety hazard to pedestrians. The action to develop new roadways and parking lots would provide a safer, more efficient traffic pattern.

1.4 Scope of This Environmental Assessment

This EA was prepared in accordance with the National Environmental Policy Act (NEPA) (Public Law 91-190, 42 United States Code [USC] §4321 et seq.), Department of the Air Force Regulation, Environmental Impact Analysis Process (32 Code of Federal Regulations [CFR] Part 989), and the Council on Environmental Quality (CEQ) implementing regulations (40 CFR §§1500-1508). The intent of NEPA is to protect, restore and enhance the human environment through well-informed Federal decisions. A variety of laws, regulations, and Executive Orders

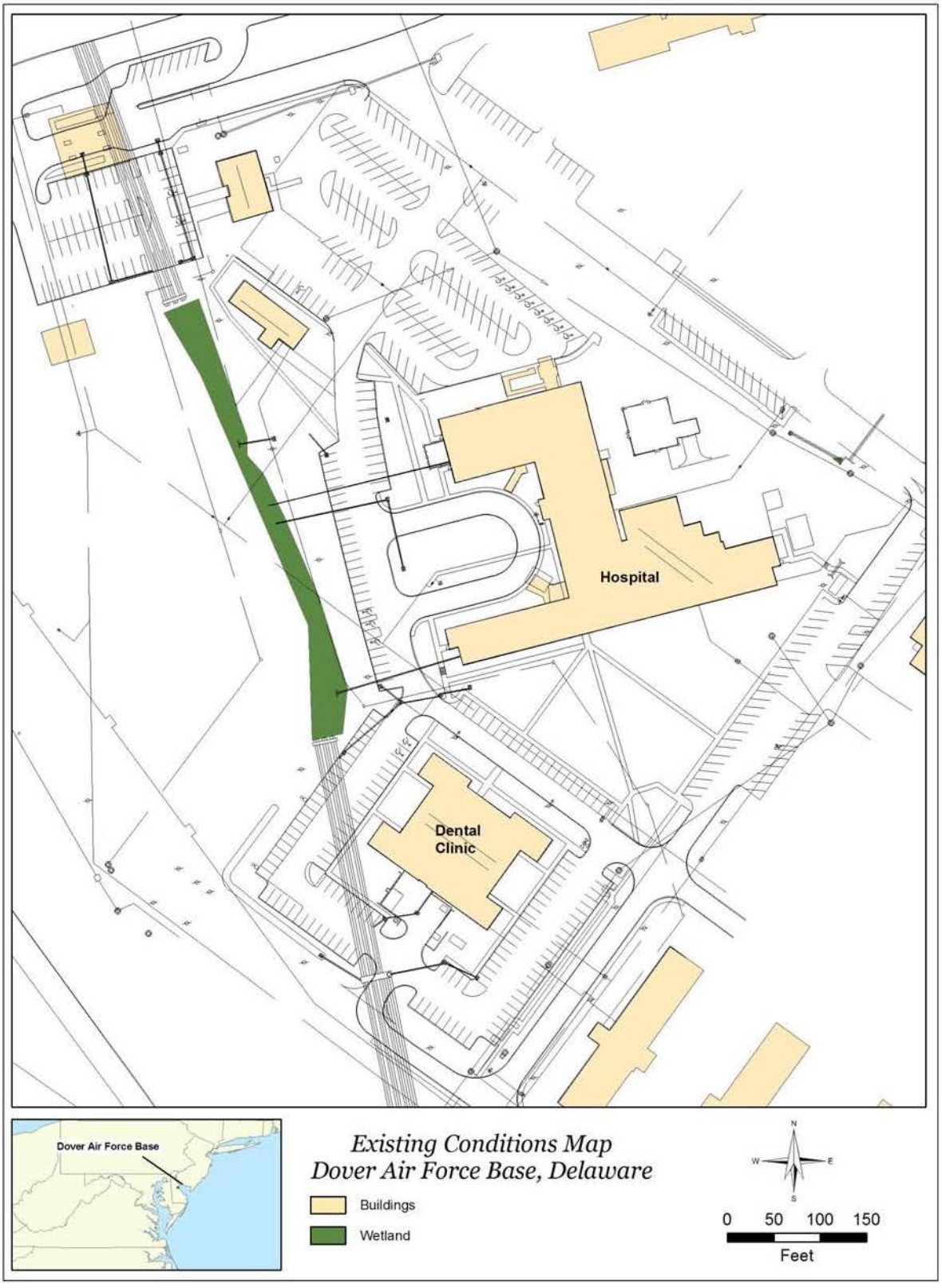

Figure 1-2. Existing Parking and Traffic Flow in the Medical Complex.

(EO) apply to actions undertaken by federal agencies and form the basis of the analyses presented in this EA. These include but are not limited to the following:

- Endangered Species Act;
- National Historic Preservation Act (NHPA);
- Clean Air Act (CAA);
- Clean Water Act (CWA);
- EO 11514, Protection and Enhancement of Environmental Quality;
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations; and
- EO 11990, Protection of Wetlands.

NEPA was signed into law in 1970 to ensure careful consideration of environmental aspects of Proposed Actions in Federal decision-making processes, and to make environmental information available to decision-makers and the public before decisions are made and actions are taken. It establishes a process for consideration of the potential effects arising from a federal action by requiring that analysis and disclosure of potential effects occur prior to the undertaking of actions with the potential to have a significant effect on the environment.

This EA describes the baseline conditions (affected environment) at Dover AFB and assesses the potential environmental impacts of the Proposed Action and alternatives on the following resource areas: air quality, transportation, water resources including wetlands, geology and soils, socioeconomics and environmental justice, and hazardous materials and wastes. CEQ regulations (§1501.7) state that the lead agency shall identify and eliminate from detailed study the issues which are not important or which have been covered by prior environmental review, narrowing the discussion of these issues in the document to a brief presentation of the impacts of the proposed action and alternatives on the human environment. In accordance with §1501.7, only those resource areas that are potentially affected by the action were carried forward in the analysis. Resources or issues that were eliminated from further consideration in the analysis include land use, biological resources (fauna and flora), coastal zone management, cultural resources, noise, and airspace.

The decision to be made, after a review of the analysis presented in this EA, would be whether to issue a finding of no significant impact (FONSI) and/or finding of no practicable alternative (FONPA) or to proceed with development of an environmental impact statement to further quantify and detail the potentially significant impacts resulting from implementation of the Proposed Action or alternatives. While this EA provides information with which to make better decisions regarding the Proposed Action, it does not imply project approval or authorization.

1.5 Organization of This Environmental Assessment

This EA follows the format established in 32 CFR §989, the U.S. Air Force guidelines for implementing the CEQ regulations (40 CFR §1502). Section 1 presents the purpose and need for the action. The alternatives, including the Proposed Action are presented in Section 2. The affected environment and environmental consequences are presented in Sections 3 and 4, respectively. A list of the document preparers and contributors is presented in Section 5. The persons and agencies contacted in the preparation of this EA, brief summary of comments received, and responses to those comments are presented in Section 6. The references used in preparation of this EA are presented in Section 7. A list of acronyms and abbreviations is provided in Section 8. The appendices provide supporting documents used in preparation of this EA.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This section of the EA describes the Proposed Action and alternatives to the proposed action, including the No Action Alternative analyzed in this EA. It also identifies the alternatives that Dover AFB has eliminated from detailed analysis. Alternatives carried forward for analysis in this EA were identified as meeting the underlying purpose and need for the action. The No Action Alternative is carried forward for analysis as a baseline to which all other alternatives are compared in accordance with NEPA §1502.14(d). This section concludes with a comparative summary of the Proposed Action and alternatives.

2.1 Identification of Selection Criteria

In an effort to satisfy the purpose and need for the Proposed Action, several selection criteria were developed to compare and contrast alternative ways of fulfilling the objectives of the Proposed Action in accordance with 32 CFR §989.8(c). Those specific criteria include:

1. **Comply with UFC 4-510-01 and UFC 3-210-02.** The redesign and construction of new parking spaces and access roads must provide at least the minimum number of parking spaces required for the medical facilities at Dover AFB and meet the design criteria for parking lot design and traffic flow. The Savannah District, USACE conducted an assessment of the parking requirements for the hospital and dental clinic at Dover AFB and found a requirement of 443 parking spaces.

2. **Comply with the Dover AFB General Plan.** The development of new parking lots and roads must not conflict with long-range plans for base development. The General Plan states the need for additional parking and improved vehicular circulation for medical facility patrons.

3. **Maximize convenience for pedestrian access to medical facilities**. The redesign and construction of new parking lots and access roads should allow patrons the easiest and shortest route to enter the hospital and dental clinic. The greatest distance for pedestrians should not exceed 500 feet to the hospital or the dental clinic per the unified facilities code.

4. **Minimize environmental impacts**. To the greatest extent possible, the redesign and construction of new parking lots and access roads should avoid sites with prior

contamination, cultural resources, and sensitive habitats such as endangered species habitats and wetlands.

5. **Ensure safety of pedestrians**. The new parking lots and access roads should be designed to ensure safety of patrons traveling between the parking lots and the medical facilities.

2.2 Description of the Proposed Action

The Proposed Action is to develop additional parking spaces in the medical facilities parking complex, connect new access roads to the transportation network to improve traffic flow, and add sidewalks for medical facility staff and patrons. Inadequate parking and poor vehicular circulation for the medical facilities was noted in the Dover AFB General Plan (Dover AFB 1991). Construction activities would cost approximately $2 million, begin in 2007, and continue for approximately four months. The Proposed Action would provide approximately 475 parking spaces, which would moderately exceed the minimum number of parking spaces identified by the Savannah District, USACE for the medical facilities parking complex. An open drainage ditch bisects the area proposed for construction of the parking log (Figure 2-1). Approximately 13,068 square feet of this ditch would be filled and culverts installed in order to connect the parking areas and provide walkways for users. The following components would be included in the Proposed Action:

- Re-stripe existing parking lots to designate new parking spaces;
- Demolish asphalt pavement to construct four new vehicle entrances to parking lots;
- Demolish asphalt pavement to install eight medians and parking islands to direct traffic flow;
- Construct four new parking lots, totaling 58,000 square feet;
- Construct 1,600 linear feet of new access roads;
- Install exterior security lighting;
- Construct 4,000 linear feet of pedestrian sidewalks;
- Install landscaping beds, trees and shrubs; and
- Implement environmental controls.

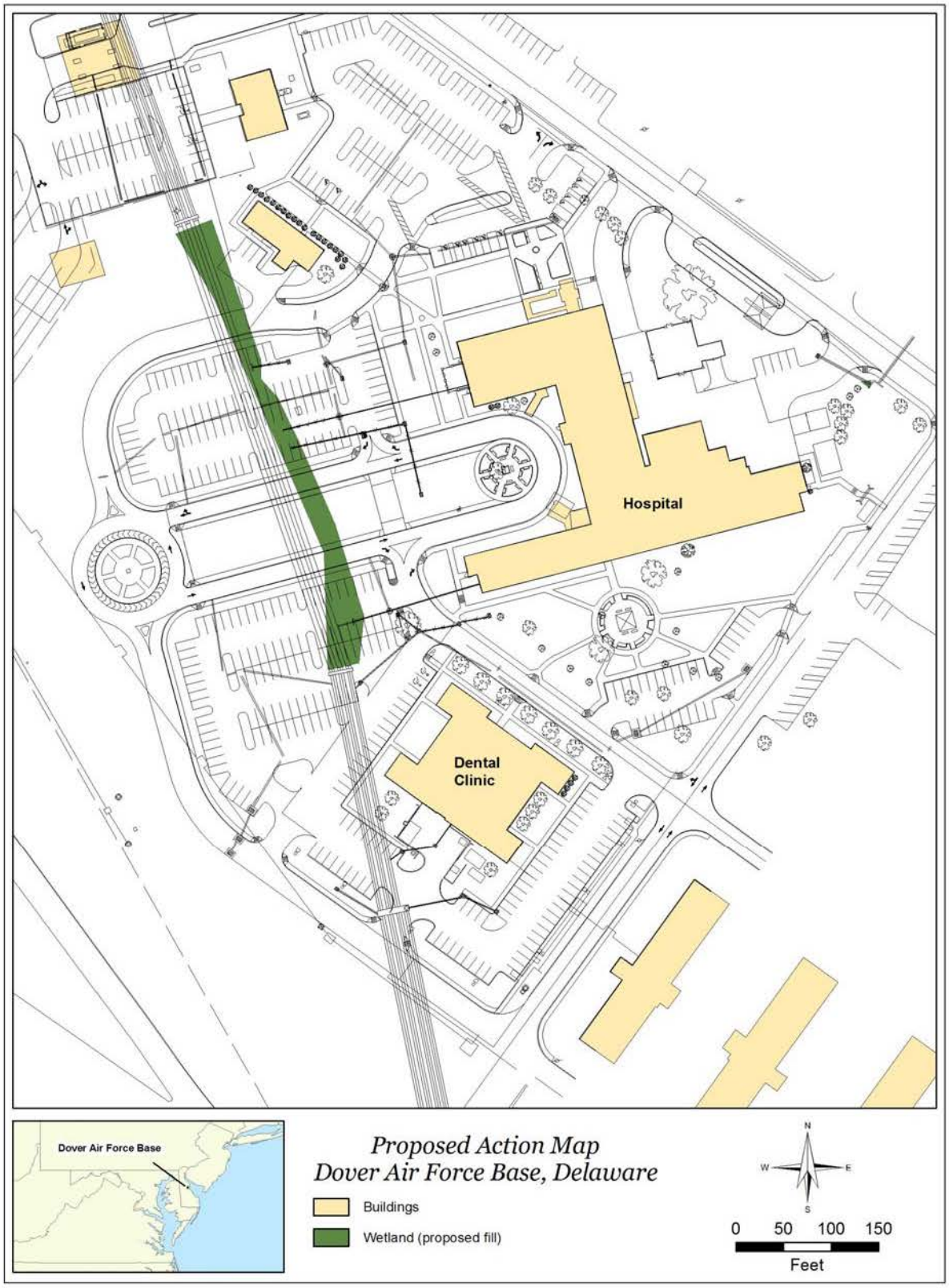

Figure 2-1. Proposed Action for the Medical Facility Parking Complex.

2.2.1 Construction Activities

The Medical Group Campus Plan that incorporates a Medical Facility Parking Complex provides sufficient design features for the Proposed Action to describe and assess the activities. Approximately 2,000 square feet of existing pavements in the parking lots and access roads in the medical facilities parking complex would be demolished and resurfaced to construct four new vehicle entrances and exits connecting the parking lots to the existing road network. Approximately 1,000 square feet of pavements would also be demolished to install eight medians and parking islands in existing parking lots to direct traffic flow. Approximately 1,600 linear feet of new access road would be constructed to improve the traffic flow through the medical facility parking complex and to connect parking lots. Four new parking lots, approximately 58,000 square feet, would be constructed. The proposed construction activities would require shallow excavation (less than 3 feet) to establish base material for the asphalt surfaces. The new parking lots and access roads would require filling and installing culverts in approximately 13,068 square feet of the drainage ditch. Approximately 4,000 linear feet of concrete sidewalks would be constructed within the parking lots and between the parking lots and the medical facilities to facilitate pedestrian movement. Parking spaces would be re-painted in the existing parking lots to change from angled parking to perpendicular parking, yielding more parking spaces in the existing lots. Angled parking restricts flow to one-way traffic. The new parking design would improve traffic flow by permitting two-way traffic in the parking areas.

Exterior security lighting would be installed in the parking lots and along the access roads to provide uniform lighting in the parking areas, access roads, and sidewalks. Approximately 40 light poles would be installed and connected to existing electrical utilities. This would not require trenching outside the limits of disturbance for the parking lots and access roads.

Landscaping beds, trees, and shrubs would be installed in the medians, parking islands, and pedestrian walkway areas. At least 10 percent of the total paved area would be devoted to landscaped areas and at least 10 percent of the landscaped areas would be located in islands within the paved area. Considerations for landscaping would also include security requirements for force protection.

2.2.2 Environmental Controls

Prior to initiation of construction activities, plans and documents would be prepared by the contractor to provide environmental controls. These plans and documents would be submitted to the contracting officer at Dover AFB for review and approval. Environmental measures under the Proposed Action would be designed to control erosion and sedimentation, stormwater runoff, and protect of wetlands. All construction debris would be recycled or disposed of at an approved landfill in accordance with all applicable federal, state, and local laws and regulations.

To reduce impacts to local and regional air quality, best management practices (BMPs), such as proper maintenance of construction vehicles to reduce combustive emissions, limiting the size of the disturbance area, and watering exposed soils at the beginning and end of daily construction activities, would be implemented to minimize or prevent fugitive dust emissions.

In accordance with Chapter 40, Title 7, Delaware Code, the State of Delaware, the Department of Natural Resources and Environmental Control (DNREC) Sediment and Stormwater Program manages the USEPA National Pollutant Discharge Elimination System (NPDES). Delaware requires that all construction sites greater than 5,000 square feet must submit and implement a Sediment and Stormwater Management Plan. This Plan requires a design report, all pertinent information from the Sediment and Stormwater Management Plan Checklist, completed Plan Checklist, project specifications, pre-application meeting, and weekly reviews by a Certified Construction Reviewer. The Erosion and Sediment Control portion of the Plan must include BMPs to reduce or eliminate the potential for erosion and sediment deposition from the construction activities. Prior to the start of construction activities, a notice of intent must be filed with DNREC at least five days prior to the start of activities. Additionally, in accordance with the Sediment and Stormwater Management guideline, post-construction BMPs may be required.

Dover AFB would meet with the Philadelphia District USACE wetland regulator to discuss the jurisdictional wetland that crosses the project site. Dover AFB would obtain an USACE wetland permit under Section 401 and 404 of the CWA. Dover AFB would include in the FONSI a statement of FONPA to construction in wetlands in accordance with EO 11990, Protection of Wetlands.

2.3 Alternatives to the Proposed Action

2.3.1 No Action Alternative

Although it would not satisfy the purpose and need for the action, a No Action Alternative has been carried forward as the baseline against which potential impacts arising from the action alternatives can be measured. The No Action Alternative is carried forward for analysis in accordance with NEPA §1502.14 (d). Under the No Action Alternative, parking and pedestrian access to the hospital and dental clinic would remain as it is currently, that is less than standard criteria specified for medical military facilities in UFC 4-510-01. Traffic flow would continue to be directed through parking areas to cross the medical facilities complex, which is also inconsistent with the standard criteria specified in UFC 3-210-02.

2.3.2 Alternative 1 - Construction of Discontinuous Parking Lots

Alternative 1 to the Proposed Action would include development of separate parking areas on the east and west sides of the drainage ditch that crosses the project site (Figure 2-2). The components of the action (i.e., exterior security lighting, sidewalks, etc.) under this alternative would remain the same as specified for the Proposed Action. This alternative would reduce the potential wetland by reducing the area of the wetland ditch that would need to be filled. To maintain the traffic flow, access roads would cross the drainage ditch three times and approximately 3,920 square feet of wetland would be filled. Approximately 445 parking spaces would be created under this alternative, 30 fewer than the Proposed Action. Under this alternative, there would be approximately 4,300 less square feet of impervious surface constructed than for the Proposed Action. Patrons of the medical facilities who park on the west side of the drainage ditch would follow an indirect route on roadside sidewalks to access the hospital and medical clinic.

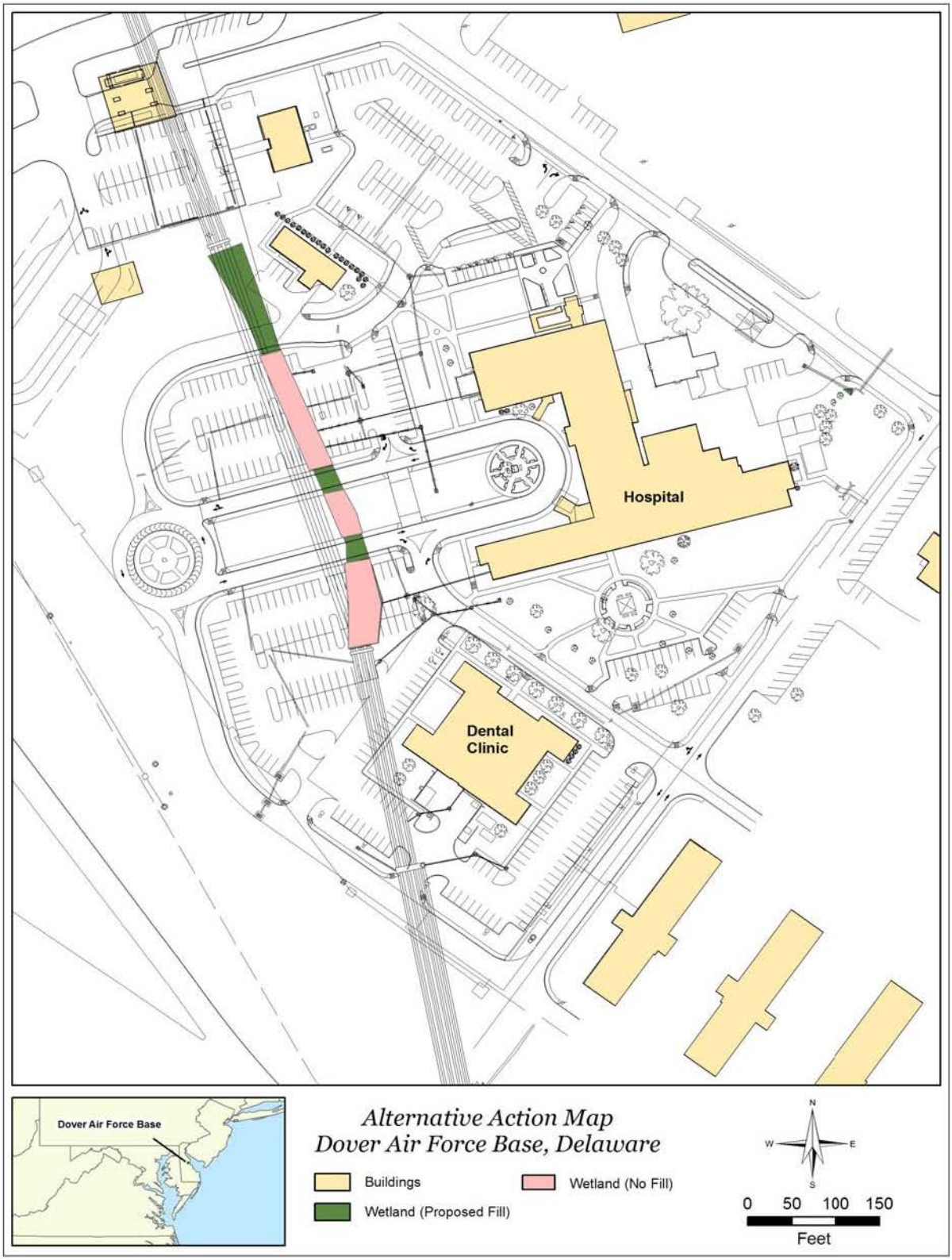

Figure 2-2. Alternative 1 – Construction of Discontinuous Parking Lots.

2.3.3 Alternatives Eliminated from Detailed Analysis

The 436 CES/CEV considered use of surrounding parking lots and expansion of existing parking lots at the medical facilities parking complex to meet compliance requirements in the UFC. There are no vacant land areas within 500 feet of the hospital for development of new parking lots and access roads other than the site of the Proposed Action. The vacant land parcel that is east of the proposed project site is designated for other development in the General Plan. The location of the medical facilities determines the site selection for the action in order for the action to achieve the purpose and need. Therefore, use of alternative sites for construction of new parking areas and access roads has been eliminated from further consideration in this EA.

An alternative to the Proposed Action that would include the use of bridges to connect separate parking areas on the east and west sides of the drainage ditch that crosses the project site was considered but eliminated from detailed analysis. This alternative could reduce the potential wetland impacts to the drainage ditch. Access roads would cross the drainage ditch three times as described for the Proposed Action and Alternative 1 to maintain the traffic flow but, instead of filling the drainage ditch, bridges would be used to support the access roads thereby reducing disturbance to the wetland. However, icing of the bridges in the winter would present an unacceptable safety hazard to pedestrians and would not meet the alternative selection criteria. Approximately 445 parking spaces or 30 fewer than designed for the Proposed Action would be constructed by not filling the drainage ditch for development of new parking lots. In addition, patrons of the medical facilities who park on the west side of the drainage ditch would follow an indirect route on roadside sidewalks to access the hospital and medical clinic.

2.4 Resources or Issues Eliminated From Detailed Analysis in This Environmental Assessment

CEQ regulations (§1501.7) state that the lead agency shall identify and eliminate from detailed study the issues which are not important or which have been covered by prior environmental review, narrowing the discussion of these issues in the document to a brief presentation of why they would not have a dramatic effect on the human environment. In accordance with §1501.7, resources or issues eliminated from detailed analysis include: land use, biological (fauna and flora), coastal zone management, cultural, noise, and airspace.

2.4.1 Land Use

Land use describes the activities that take place in a particular area and generally refers to human modification and occupation of land, usually for residential or commercial purposes. The Proposed Action or alternatives would be consistent with present and foreseeable land use patterns at Dover AFB in accordance with its General Plan. The Proposed Action would support the principal land use of the site, a medical facility, by improving the parking situation and traffic flow in the medical facility parking complex and would not change the existing land use. Therefore, this resource has been eliminated from detailed analysis in this EA.

2.4.2 Biological Resources

Biological resources typically evaluated in EAs include vegetation, wildlife, and protected species. Currently, vegetation within the proposed project site consists of maintained and regularly mowed grasses and would not be expected to support a diversity of wildlife species. According to the 1993 Biological/Ecological Inventory, there are no known occurrences of federally listed threatened or endangered animals or plants at Dover AFB (Dover AFB 2001). DNREC advised Dover AFB that federal protected species or suitable habitats do not exist within the boundaries of the base (Appendix A). Therefore, these resources have been eliminated from detailed analysis in this EA.

2.4.3 Coastal Zone Management

Dover AFB is located in the coastal zone regulated by the Delaware Coastal Zone Act. The Regulations Governing Delaware's Coastal Zone state that the construction and/or operation of parking lots or structures not involved in manufacturing is not regulated under Delaware's Coastal Zone Act (DNREC 2005). However, unless the No Action Alternative is selected, Dover AFB would provide a signed consistency certification to DNREC that the action complies with and will be conducted in a manner that is consistent with the approved state coastal zone management program. Therefore, this issue has been eliminated from detailed analysis in this EA.

2.4.4 Cultural Resources

The NHPA of 1966 (16 USC 470 et seq., as amended), the Archeological and Historic Preservation Act of 1974 (16 USC 469a et seq.), and the Archeological Resources Protection Act of 1979 (16 USC470aa-470ll) are designed to ensure adequate consideration of the values of

historic properties in carrying out federal activities and to attempt to identify and mitigate impacts to significant historic properties. Historic resources include buildings, structures, objects, landscapes, and archeological sites, as well as places of importance to a culture or community for reasons of history, religion, or science. According to Dover AFB cultural resource surveys (Dover AFB 2005b). There are no known cultural resources in the proposed project site. Therefore, this issue has been eliminated from detailed analysis in this EA.

2.4.5 Noise

Noise is defined as any sound that is undesirable because it interferes with communication, intense enough to damage hearing, or is otherwise intrusive. The proposed construction of new parking lots and access roads would be short term and not be a significant contributor to the existing noise environment compared to the C-5 aircraft based at Dover AFB and any transient aircraft that visit the base. The use of standard operating procedures for minimizing noise such as operation during work hours and using mufflers on equipment would be mandated for the Proposed Action. Implementing the Proposed Action or alternatives would not alter ambient noise levels at or adjacent to the project site. Therefore, this issue has been eliminated from detailed analysis in this EA.

2.4.6 Airspace

Implementing the Proposed Action or alternatives would not alter the airspace of aircraft operations at Dover AFB. Transport of materials and equipment for the Proposed Action would not involve aircraft operations. Therefore, this issue has been eliminated from detailed analysis in this EA.

2.5 Comparison of Alternatives

Table 2-1 provides a summary comparison of the alternatives as they relate to the alternative selection criteria presented in Section 2.1. This table indicates that the Proposed Action and Alternative 1 would meet the established purpose and need for the action. However the Proposed Action would provide a greater benefit regarding pedestrian access than Alternative 1. Pedestrians would not have direct access to medical facilities because of the discontinuous parking lots proposed under Alternative 1. The No Action Alternative is carried forward as a baseline for analysis of the action alternatives.

Table 2-1. Summary Comparison of Alternatives

Alternative Selection Criteria	Alternatives		
	Proposed Action	Alternative 1	No Action
Comply with UFC 4-510-01 and UFC 3-210-02	Yes	Yes	No
Comply with the Dover AFB General Plan	Yes	Yes	No
Maximize convenience for pedestrian access to medical facilities	Yes	No	No
Minimize environmental impacts	Yes	Yes	Yes
Ensure pedestrian safety	Yes	Yes	No

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3.0 AFFECTED ENVIRONMENT

This section of the EA describes the relevant environmental conditions at Dover AFB for resources that would be potentially affected by implementation of the Proposed Action or one of the alternatives. Although the region of influence (ROI) or the expected geographic scope of potential impacts includes all of Dover AFB, the actual limit of disturbance for the Proposed Action would be approximately 20 acres in the medical facilities parking complex. The footprint of land disturbance would be approximately 3 acres. In compliance with guidelines contained in NEPA, the CEQ regulations, and 32 CFR §989, the description of the affected environment focuses on those resources potentially subject to impacts.

3.1 Air Quality

The CAA (42 USC 7401-7671q), as amended, gives the USEPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR §50) that set safe concentration levels for six criteria pollutants: particulate matter measuring less than 10 microns in diameter (PM_{10}), sulfur dioxide (SO_2), carbon monoxide (CO), nitrous oxides (NO_x), ozone (O_3), and lead (Pb). Each state has the authority to adopt standards stricter than those established under the federal program; however, Delaware accepts the federal standards (Table 3-1).

Primary NAAQS are established to protect public health, and secondary standards provide protection for the public welfare, which includes wildlife, climate, transportation, and economic values. Areas that violate air quality standards are designated as “nonattainment” areas, and areas that comply with air quality standards are designated “attainment” areas for the relevant pollutants.

In areas currently designated as being in nonattainment, federal agencies are required to determine whether their Proposed Action would increase emissions of criteria pollutants above threshold levels (40 CFR §93.150–93.160). To ensure that federal actions do not interfere with a state’s timely attainment of the NAAQS, the CAA requires that federal agencies demonstrate that their actions conducted in nonattainment and maintenance areas conform to the purposes of the State Implementation Plan (SIP). According to the implementing regulation, promulgated by the USEPA, proposed federal actions must be specifically identified in the SIP, must have minor

emissions below threshold levels identified in the regulations, or must offset any resulting increases in emissions.

Table 3-1. National Ambient Air Quality Standards

Air Pollutant	Averaging Time	NAAQS	
		Primary	Secondary
CO	1-hour	35 ppm	35 ppm
	8-hour	9 ppm	9 ppm
NO_x	Annual	0.053 ppm	0.053 ppm
SO_2	3-hour	-	0.50 ppm
	24-hour	0.14 ppm	-
	Annual	0.03 ppm	-
PM_{10}	24-hour	150 µg/m^3	150 µg/m^3
	Annual	50 µg/m^3	50 µg/m^3
O_3	1-hour	0.12 ppm	0.12 ppm
	8-hour	0.08 ppm	0.08 ppm
Pb	Quarterly average	1.5 µg/m^3	1.5 µg/m^3

ppm = parts per million
µg/m^3 = micrograms per cubic meter
Source: USEPA 2005a

The ROI for air quality impacts for the action would be the area immediately surrounding Dover AFB. For analysis purposes, the emissions produced for the Proposed Action are compared to local data and implementation plans in Kent County, Delaware. Under the CAA, Kent County is classified as a severe nonattainment area for ground-level O_3 with respect to the 1-hour NAAQS and moderate nonattainment with respect to the 8-hour NAAQS (USEPA 2005b).

3.2 Transportation

Transportation in this EA refers to the roadway systems that enable persons and goods to move about on Dover AFB and in the vicinity. The number of vehicles that can pass over a given section of roadway during a specified period generally measures roadway capacity. This capacity is usually considered in terms of levels of service, which is a qualitative measure describing operational conditions within a traffic stream; it is described in terms of speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

The upgrade of U.S. 113, which was part of the construction for State Route (SR) 1 from the New Castle County area to SR-9 along the southern boundary of Dover AFB, included a new

overpass that provides direct access to the Main Gate. SR-10 provides direct access to the North Gate from the west. The surrounding highway network is adequate to handle the present and prospective transportation needs of Dover AFB. The Dover AFB roadway system safely handles and distributes vehicular movements with a minimum amount of congestion and delay. This includes traffic movements onto and off the base as well as movement within the base. Atlantic Street is the major collector road. It handles a significant portion of all personal owned vehicles and tractor-trailers that enter the base through the North Gate. Thirteenth Street also serves as a major collector. Numerous minor collectors distribute traffic throughout Dover AFB. On street parking is prohibited where possible to maintain traffic flow and safety. Off street parking is generally adequate on Dover AFB except for a few locations, including the medical facility (Dover AFB 1991).

3.3 Water Resources

Water resources for this project include groundwater, stormwater management and wetlands. The project site is not within the floodplain nor are there any surface waters in the vicinity (Dover AFB 2001).

3.3.1 Groundwater

Shallow groundwater at Dover AFB is found in the Columbia Aquifer. The Frederica, Cheswold, and Piney Point aquifers occur but are not shallow (Dover AFB 2001). The unconfined Columbia Aquifer is the uppermost aquifer beneath Dover AFB and holds the water table that ranges from 70 feet below ground surface to within a few feet near the St. Jones River. The groundwater generally flows southwest toward the St. Jones River and its tributaries. Periodic drying of the drainage ditch through the project site indicates that the bottom elevation is above the high water table.

3.3.2 Stormwater Management

The St. Jones River flows along the western boundary of Dover AFB and is approximately one mile southwest of the project site. Pipe Elm Creek of the Little River flows through the northern portion of the base. A drainage system consisting of ditches and below-ground pipes diverts surface-water runoff from Dover AFB into these two rivers (Dover AFB 2001). A wet meadow was constructed in coordination with the USACE in the golf course in 1999 as wetland mitigation for the installation of stormwater quality control devices for Outfalls 003 and 007.

This treatment wetland processes stormwater in the Outfall 007 watershed, including drainage through the wetland ditch in the proposed project site.

3.3.3 Wetlands

The Federal Water Pollution Control Act, as amended by the CWA of 1977, was enacted to protect these valuable, irreplaceable resources. The Water Pollution Prevention and Control Act (33 USC 26), also known as the CWA Amendments, set the national policy objective to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.

Jurisdictional waters, including surface water and wetlands as defined in 33 CFR §328.3, are regulated under Sections 401 and 404 of the CWA and Section 10 of the Rivers and Harbors Act. Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for saturated soil (Environmental Laboratory 1987). Drainage ditches may be considered jurisdictional wetlands if they constitute a surface water connection between waters of the United States. The project site contains an open drainage ditch (0.3 acre) that is classified as a jurisdictional wetland (Dover AFB 2004). The drainage ditch is culverted on both ends but is classified as a jurisdictional wetland because it connects to another ditch that connects to the St. Jones River, which is approximately one mile from the project site. Field observations indicated that the drainage ditch dries sufficiently to permit mowing; parts of the drainage ditch have mowed turf in the bottom and there was no woody vegetation observed in the ditch during site visits. Wetland functions and values that can be attributed to the ditch are minimal and limited to water quality improvement and flood protection. Based on field observations, the intermittent flow and maintained vegetative cover in the ditch does not provide wildlife or fisheries habitat functions or values.

3.4 Geology and Soils

Geology and soils in this EA include the physiographic and topographic features that formed the soil types in the vicinity. Kent County lies in the Coastal Plain Plateau Province, which is lowland that borders the Atlantic Ocean (Dover AFB 2001). The Coastal Plain Plateau Province is generally flat, seaward sloping lowland with some moderately steep local relief. The Coastal Plain is generally underlain by semiconsolidated to unconsolidated sediments that consist of silt, clay, and sand with some gravel and lignite.

The topography is nearly level to gently sloping. The soil in the proposed project site is classified as urban land complex. The soil type is Sassafras Loam, two to five percent slopes. All areas of this soil type are prime farmland; however, the dedicated land use of the site precludes applicability of this designation. This soil type is well drained and has very high available water capacity. This soil type is not flooded and is not ponded. The water table is deeper than six feet. Sassafras Loam is not a hydric soil (University of Delaware 2005).

3.5 Socioeconomics and Environmental Justice

Socioeconomics is the study of the prevailing population, income, employment, and housing characteristics of a community or area of interest. Environmental Justice refers to an ongoing effort by the federal government to assure decision makers that any adverse effects associated with proposed actions would not disproportionately be borne by populations of special concern. EO 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations issued in 1994, tasks federal agencies with the responsibility to provide this assurance as part of NEPA decision making assessments. If minority or low-income groups were to experience a disproportionate adverse effect from a proposed action, then avoidance or mitigation measures are to be taken. The ROI for the Proposed Action is Kent County, Delaware.

3.5.1 Population and Demographics

The population in Kent County increased approximately 14 percent between 1990 (110,993) and 2000 (126,697). The population of the census tract containing Dover AFB (Census Tract 411) declined approximately 30 percent between 1990 (5,488) and 2000 (3,849), which followed the trend observed in the immediately adjacent census tracts and block groups (U.S. Census Bureau [USCB] 1993, 2002).

The majority of the population in Kent County is White, non-Hispanic. The percent of minorities was 27.8 percent of the population, which falls below the threshold for a concentrated minority population. Census Tract 411 had a total minority population of 31.1 percent of the total population, which is also below the threshold for a concentrated minority population (USCB 2002).

3.5.2 Income and Employment

The median household income increased 38.8 percent and 43.4 percent between 1990 and 2000 in Kent County and Census Tract 411, respectively (USCB 1993, 2002). Earnings data indicated that personal income in Kent County increased 65.2 percent between 1990 and 2000 to $3.0 billion (Bureau of Economic Analysis [BEA] 2004a).

Total full-time and part-time employment increased approximately 23.8 percent in Kent County between 1990 and 2000 (BEA 2004b). The poverty rate decreased approximately 0.6 percent in Kent County to 10.7 percent between 1990 and 2000 (USCB 1993, 2002). The poverty rate also decreased in Census Tract 411 to 4.2 percent, a decline of 1.9 percent. These areas would not be considered concentrated poverty areas.

3.6 Hazardous Materials and Wastes

Hazardous material is defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Solid Waste Disposal Act, and Emergency Planning and Community Right-to-Know Act (EPCRA) as a substance that, because of quantity, concentration, or physical or chemical characteristics, may present substantial danger to public health, welfare, or the environment. The term hazardous waste, as defined by the Resource Conservation and Recovery Act (RCRA), means any solid, liquid, contained gaseous or semisolid waste, or any combination of wastes that pose a substantive present or potential hazard to human health or the environment. Hazardous wastes must exhibit a characteristic of toxicity, reactivity, ignitibility, or corrosively, or be listed as a hazardous waste as indicated in 40 CFR §261 and §263, respectively.

CERCLA and the Superfund Amendments and Reauthorization Act (SARA) of 1986 authorize the USEPA to respond to spills and other releases of hazardous substances to the environment. It also authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. Title III of SARA authorizes EPCRA, which requires facility operators with hazardous substances to prepare comprehensive emergency plans and to report accidental releases. EO 12856 (Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements, August 1993) requires federal agencies to comply with the provisions of EPCRA.

The Proposed Action would require the use of hazardous materials, such as solvents, paints, hydraulic fluids, and lubricants. Hazardous wastes would be generated during construction

activities, including combustible solvents and spent acids from corrosion control. Hazardous materials and wastes are managed at Dover AFB in accordance with applicable regulations and plans such as the Hazardous Material Plan and Spill Prevention, Control and Countermeasures Plan.

Through an August 1997 base-wide remedial investigation, 59 Environmental Restoration Program (ERP) sites were identified as having hazardous or potentially having hazardous contamination (Dover AFB 2005a). There are no ERP sites in the vicinity of the proposed project site.

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4.0 ENVIRONMENTAL CONSEQUENCES

This section of the EA provides an analysis of the environmental consequences. Table 4-1 provides a summary of the environmental consequences associated with implementing those alternatives carried forward for detailed analysis.

Table 4-1. Alternatives Comparison Matrix Summary

Resources/Issues (Threshold Criteria)	Alternatives		
	Proposed Action	**Alternative 1**	**No Action**
Air Quality			No Change
(*emissions above de minimis*)	No	No	
Transportation	Beneficial Impact	Beneficial Impact	No Change
(*level of service*)			
(pedestrian circulation)			
Water Resources			No Change
(*within the 100-year floodplain*	No	No	
(exceeds stormwater capacity)	No	No	
(wetland impacts)	Minimal	Minimal	
(groundwater within construction limits)	No	No	
Geology and Soils			No Change
(*change in topographic relief)*	No	No	
(soil capability loss)	No	No	
Socioeconomics and Environmental Justice			No Change
(*change in personal income or employment)*	No	No	
(minority and/or low-income populations affected)	No	No	
Hazardous Materials and Wastes			No Change
(*hazardous materials onsite)*	No	No	
(release of hazardous materials)	No	No	

4.1 Air Quality

Impacts to air quality would be considered significant if project emissions exceeded the NAAQS, exceeded the *de minimis* exemption levels, or exposed sensitive receptors to increased pollutant concentrations. Potential emissions for the ozone precursor pollutants, NO_x and volatile organic compounds (VOC), were estimated for the General Conformity Rule applicability analysis.

4.1.1 No Action Alternative

Under the No Action Alternative, the parking and access roads would remain unchanged at the medical facilities parking complex. Therefore, no changes to the current air quality would occur if this alternative was selected.

4.1.2 Proposed Action - Construction of Continuous Parking Lots

Implementation of the Proposed Action would have temporary, minor impacts to the local air quality. Fugitive dust (PM_{10}) from ground-disturbing activities, demolition of existing roadways, combustive emissions from equipment used in construction of new roadways and parking areas, and emissions from asphalt paving operations would be generated during the Proposed Action. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity. Emissions from activities associated with site clearing, grading, and cut-and-fill operations and from vehicular traffic moving over the disturbed site would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. A conservative estimate of PM_{10} emissions for construction and demolition activities provided by the USEPA is 1.2 tons/acre/month of activity (USEPA 1995). The project area would be approximately 1.5 acres and expected to last for up to four months (7.2 tons of PM_{10}). Watering exposed soil at the beginning and end of each day according to BMPs would decrease the amount of fugitive dust by as much as 50 percent released into the atmosphere from construction operations and trucks driving on unpaved surfaces. Therefore, impacts from fugitive dust are expected to be minimal and temporary.

Asphalt is composed of compacted aggregate and an asphalt binder known as asphalt cement. Hot-mix asphalt is the most commonly used paving asphalt for surfaces of two to six inches thick. It is prepared by heating the asphalt cement prior to adding the aggregate. The pollutants of concern from asphalt paving operations are VOCs. VOCs are emitted from the equipment

used to apply the asphalt (such as a roller and concrete truck) and from the road surface itself as the petroleum solvent used to liquefy the asphalt cement evaporates. Hot-mix asphalt produces minimal emissions of VOCs since the organic components of this type of asphalt have high molecular weights and low vapor pressures (USEPA 1995). VOC emissions from evaporation are expected to be minimal and temporary. Estimates for emissions were based on four months of construction (80 workdays, 8 hours per day). Emissions were calculated for the expected equipment used during paving operations and construction of the roadways and parking areas (one dump truck, two rollers, two concrete trucks, and one water truck). Emissions from the proposed construction activities is expected to be minimal, short-term, and below *de minimis* values (Table 4-2). Therefore, the General Conformity Rule does not apply to the Proposed Action. The associated emissions would be considered insignificant and not affect the local air quality, therefore, a Record of Non-Applicability would be prepared for the proposed project.

Table 4-2. Emission Estimates (tons per year).

	CO	**VOC**	**NO_x**	**SO_x**
Construction Equipment Exhaust	2.24	0.30	5.47	0.59
Worker Vehicles - Commuting	0.75	0.05	0.05	0.00
TOTAL	**2.28**	**0.30**	**5.47**	**0.59**
de minimis levels	N/A	25	25	N/A

4.1.3 Alternative 1 - Construction of Discontinuous Parking Lots

Implementation of Alternative 1 would have similar impacts as those described for the Proposed Action. Under this alternative there would be a small decrease in the amount of paved surfaces resulting in slightly lower emissions. As with the Proposed Action, emissions would be considered temporary and below *de minimis* levels.

4.1.4 Cumulative Impacts

Implementing the No Action, Proposed Action, or Alternative 1 would not result in cumulative impacts. Emissions associated with the construction of new parking areas, sidewalks, and roadways would be minor and temporary. The potential emissions in the immediate area would cease once construction was complete and would not change the air quality for the region.

4.2 Transportation

Impacts to transportation would be significant if traffic counts, roadway design and geometry, or signalization, changed the capacity and efficiency of the roadway access and transportation system at Dover AFB.

4.2.1 No Action Alternative

Under the No Action Alternative, none of the proposed construction activities would occur and baseline traffic conditions would remain unchanged. The inadequate parking and poor traffic circulation at the medical facilities mentioned in the Dover AFB General Plan would continue under this alternative. The parking and pedestrian access to the hospital and dental clinic would be restricted to less than standard criteria specified for medical military facilities in UFC 4-510-01. Traffic flow would continue to be directed through parking areas to cross the medical facilities parking complex, which is also inconsistent with the standard criteria specified in UFC 3-210-02.

4.2.2 Proposed Action - Construction of Continuous Parking Lots

Implementing the Proposed Action would have short term, minor impacts on the roadway system at Dover AFB during construction activities. Traffic would need to be rerouted to avoid construction activities and may cause minor delays; however, the road network on Dover AFB is designed to handle temporary increases in traffic volumes and commercial traffic associated with the mission. The long-term benefits of the Proposed Action include increased parking spaces for hospital and dental clinic patrons, and improved traffic flow through the medical facilities parking complex. Implementing the Proposed Action would reduce or eliminate the need for hospital and dental patrons to use on-street parking as currently exist. Pedestrian circulation in the medical facilities parking complex would be improved by providing closer parking and more direct routes to the medical facilities. Approximately 4,000 feet of new sidewalk would be constructed to facilitate pedestrian movements. The installation of exterior lighting in the project site would increase pedestrian safety and improve traffic flow in the area by lighting access roads and parking lots. Standard criteria for adequate parking and vehicular circulation specified in UFC 4-510-01 and UFC 3-210-02 would be met under the Proposed Action. Transportation systems off the base would not be impacted by the proposed construction activities;

consequently, there would be no change to planning assumptions or recommended roadway improvements in the vicinity.

4.2.3 Alternative 1 - Construction of Discontinuous Parking Lots

Similar to the Proposed Action, implementing Alternative 1 would have short term, minor impacts on the roadway system at Dover AFB during construction activities. This alternative would include development of the new access roadway as described for the Proposed Action. However, the construction of discontinuous parking lots would result in less efficient travel for patrons who park across the drainage ditch from the hospital. Patrons that park across the ditch would not have a direct access route to the hospital but would be required to follow the route of the access roads. The minor delays during construction caused by implementing Alternative 1 would be offset by the long-term benefits of increased parking spaces for hospital and dental clinic patrons, and improved traffic flow through the medical facilities parking complex. Also as indicated for the Proposed Action, transportation systems off the base would not be impacted under Alternative 1.

4.2.4 Cumulative Impacts

Construction of new parking lots, access roads, and associated activities specified in the Proposed Action or Alternative 1 would result in long-term benefits to the medical facilities patrons. In addition, base personnel traveling in the vicinity would benefit from the improved traffic flow. The construction of additional parking spaces and access roads in the medical facilities parking complex was included in the Dover AFB General Plan; therefore, the Proposed Action or Alternative 1 would not result in cumulative impacts to future development.

4.3 Water Resources

Impacts to water resources would be considered significant if implementation of the action resulted in changes to water quality or supply, threatened or damaged unique hydrologic characteristics, or violated established laws or regulations.

4.3.1 No Action Alternative

Under the No Action Alternative, there would be no change to the water resources at Dover AFB. The proposed construction activities would not occur; therefore, no impacts would occur to water resources in the project site.

4.3.2 Proposed Action - Construction of Continuous Parking Lots

Implementing the Proposed Action would not impact groundwater resources since the proposed construction activities would not be conducted below three feet of the ground surface, well above the reported groundwater elevation in the vicinity. The Proposed Action could result in minor impacts to water quality from surface water runoff following storm events during construction activities; however BMPs outlined in the Sediment and Stormwater Management Plan prepared for the action would be implemented to minimize impacts from erosion and sedimentation.

The USACE-approved wetland in the golf course for treatment of stormwater through Outfall 007 would adequately process stormwater runoff from the additional impervious surfaces developed under the Proposed Action. The wetland constructed in 2003 would satisfy DNREC requirements for water quality through Outfall 007 (Benner 2005b). Although the drainage ditch through the project site would be filled and culverted under the Proposed Action, the capacity to convey stormwater runoff would not be exceeded with the additional impervious surfaces.

Stormwater design features such as installation of comparably sized culverts would be incorporated into the Proposed Action to maintain the flood protection value of the existing drainage ditch. The potential wetland function loss in water quality improvement by culverting the drainage ditch would be negligible because the ditch exhibits minimal wetland function and primarily serves to drain stormwater.

Implementing the Proposed Action would result in filling and culverting approximately 0.3 acre of the wetland ditch. Prior to the action, Dover AFB would coordinate with the Philadelphia District, USACE Regulatory Office and get an approved wetland permit. Dover AFB would be responsible for contacting and reporting responses from U.S. Fish and Wildlife Service, National Marine Fisheries Service, State Historic Preservation Office, and DNREC prior to submitting a permit request to the USACE.

4.3.3 Alternative 1 - Construction of Discontinuous Parking Lots

Implementing Alternative 1 is expected to have the same impacts to surface water quality and stormwater management as the proposed action. This alternative would impact approximately 0.09 acre of the wetland ditch. The ditch would be filled and culverted for the three access road crossings required to maintain traffic flow through the medical facilities parking complex. Without implementation of the road crossings, this alternative would not satisfy the selection

criteria. Under this alternative the ditch would remain open between the road crossings. Additional maintenance of the ditch could be required under this alternative to remove litter that might accumulate from persons using the new parking lots. Prior to the action, Dover AFB would coordinate with the Philadelphia District, USACE Regulatory Office and get an approved wetland permit.

4.3.4 Cumulative Impacts

Implementing the Proposed Action, Alternative 1, or No Action Alternative would not result in cumulative impacts to water resources. The potential short-term impacts to water quality during construction activities would cease upon completion of the project. The filling and culverting of the drainage ditch through the project site would not affect water quality or wetlands downstream, specifically the St. Jones River, which is approximately one mile from the project site. Additional wetland impacts to the drainage ditch in the project site would not be likely because no further construction of parking lots and access roads would be necessary to meet current design requirements for the medical military facilities at Dover AFB.

4.4 Geology and Soils

Impacts to geology and soils would be considered significant if the proposed construction activities altered aquifer recharge zones or were located near faults or other geological hazards. Impacts to soils can occur if erosion control measures are not properly implemented.

4.4.1 No Action Alternative

Under the No Action Alternative, there would be no change to the geology and soils at Dover AFB. The proposed construction activities would not occur; therefore, no impacts would occur to these resources in the project site.

4.4.2 Proposed Action - Construction of Continuous Parking Lots

Implementing the Proposed Action would not significantly affect geologic features underlying Dover AFB. Ground disturbance would occur during construction on undeveloped land in the medical facility parking complex. Construction activities involving ground disturbances would include grading and clearing; however, disturbances would not occur at depths that could potentially impact aquifer recharge zones.

Soils would be disturbed during construction activities on approximately 3 acres associated with the Proposed Action. However, erosion and sedimentation control measures such as silt fences, straw bales, sediment traps, application of water sprays, cut and fill balancing, and hydroseeding disturbed soils would be implemented to minimize impacts to soils. Therefore, only temporary and minor impacts to soils would be expected as a result of implementation of the Proposed Action.

4.4.3 Alternative 1 - Construction of Discontinuous Parking Lots

Similar to the Proposed Action, implementing Alternative 1 would not result in significant impacts to geology and soils at Dover AFB. Soils would be disturbed during construction activities on slightly less than 3 acres. However, BMPs would be implemented during construction to minimize impacts to soils associated with grading and clearing activities as specified for the Proposed Action. Therefore, only temporary and minor impacts to soils would be expected by implementing Alternative 1.

4.4.4 Cumulative Impacts

Implementing the Proposed Action, Alternative 1, or No Action Alternative would not result in cumulative impacts to geology and soils at Dover AFB. The proposed construction activities or similar future actions would not affect geologic features because the activities do not require deep subsurface excavation on the undeveloped land. Future development of the site is unlikely because no further construction of parking lots and access roads would be necessary to meet current design requirements for the medical military facilities at Dover AFB.

4.5 Socioeconomics and Environmental Justice

Socioeconomic resources would be impacted if the action resulted in a change to the population, employment, or income potential in the ROI. The ROI is not considered an area with a concentrated minority population or poverty area; therefore, there are no environmental justice concerns.

4.5.1 No Action Alternative

Implementing the No Action Alternative would not change employment opportunities or change the population growth rate, and there would be no impacts to the social or economic characteristics in the ROI. Under the No Action Alternative, there would be no construction of

new parking lots, access roads, and associated developments at Dover AFB that could generate socioeconomic impacts.

4.5.2 Proposed Action - Construction of Continuous Parking Lots

Implementing the Proposed Action would not result in significant impacts on the demographics, employment, or income potential in the ROI. The proposed construction activities would likely be conducted by outside contractors with employees from within the ROI. However, the economic benefits would be minor and short-term compared to regional economic generation. Since this alternative would not create any new employment opportunities, reduce the current number of employment opportunities, or change the population growth rate, there would be no anticipated impacts to the social or economic characteristics of the ROI.

4.5.3 Alternative 1 - Construction of Discontinuous Parking Lots

Similar to the Proposed Action, implementing Alternative 1 would not result in significant impacts on the demographics, employment, or income potential in the ROI. The construction of discontinuous parking lots would involve a similar level of effort as the Proposed Action. Similarly, the economic benefits would also be minor and short-term with no anticipated impacts to the social or economic characteristics of the ROI.

4.5.4 Cumulative Impacts

Implementing the Proposed Action, Alternative 1, or No Action Alternative would not result in cumulative impacts to socioeconomic resources. The short-term economic input to the ROI from the proposed construction of new parking lots, access roads, and associated developments would be negligible compared to the regional economic generation. No long-term impacts would be expected. In addition, the proposed construction activities would not generate future revenue or employment opportunities at Dover AFB.

4.6 Hazardous Materials and Wastes

Hazardous materials and wastes management at Dover AFB would be impacted if the construction activities resulted in a release of these materials into the environment. Potential releases to the air, water or soil that exceed federal and state guidance would be considered significant.

There may be residual contaminants in the soil that may not allow for unrestricted disposal of excavated soils. These contaminants may include pesticides, such as chlordane and heptachlor, several semi-volatile organic compounds, and metals such as lead and chromium. Any excavated soil that is not suitable for use on site would be stockpiled on site and tested to determine proper disposal requirements. Each stockpile of soil would be analyzed for the following items:

a. Full TCLP (toxicity characteristic leachate procedure) to include ignitability, reactivity, corrosivity, metals, organics, pesticides and herbicides;
b. Total Petroleum Hydrocarbons (TPH);
c. Polychlorinated Biphenyls (PCBs);
d. BTEX (Benzene, Toluene, Xylene, and Ethyl benzene); and
e. Percent Solids.

The sample results would be submitted to Civil Engineering Squadron, Environmental (CES/CEV) for interpretation. CEV will use the hazardous waste limitations in the code of federal regulations when evaluating the TCLP results to determine if the soil must be disposed of as hazardous waste. The other remaining parameters are required for disposal at a Delaware Solid Waste Authority (DSWA) facility and have associated DSWA limitations. Those limitations will be compared to the results to determine if the soil can be disposed of within the State of Delaware, only if the soil is not a hazardous waste. If soil is hazardous waste, it would be disposed of accordingly at a disposal facility permitted to accept hazardous waste. If the soil is non-hazardous waste but does not meet the limitations of the DSWA, the soil would be disposed of at a disposal facility permitted to accept such waste.

4.6.1 No Action Alternative

Implementing the No Action Alternative would result in no impacts from hazardous materials or wastes since no construction activities would occur. Existing levels of hazardous materials or wastes from ongoing operations would be maintained and disposed of in accordance with applicable regulations.

4.6.2 Proposed Action - Construction of Continuous Parking Lots

Implementing the Proposed Action could consume hazardous materials and/or generate hazardous wastes. The potential impacts would be short-term, approximately four months during construction activities. Hazardous materials used for construction activities would likely include

fuels, paints, glues, and asphalt materials. Most of these materials would typically be consumed in their entirety and very little waste generated for disposal. As a result, no large amounts of construction-related hazardous materials would be expected, and any hazardous wastes generated during the activities would be disposed of in accordance with applicable federal, state, and local regulations. No long-term impacts would be expected because use of hazardous materials and generation of hazardous wastes would cease after construction activities. Therefore, there would be no impact from release of hazardous materials and wastes to the environment.

4.6.3 Alternative 1 - Construction of Discontinuous Parking Lots

Similar to the Proposed Action, implementing Alternative 1 could consume hazardous materials and/or generate hazardous wastes. However, no large amounts of construction-related hazardous materials or wastes would remain after construction activities and they would be disposed of in accordance with applicable federal, state, and local regulations. Therefore, there would be no impact from release of hazardous materials and wastes to the environment.

4.6.4 Cumulative Impacts

Implementing the Proposed Action, Alternative 1, or No Action Alternative would not result in cumulative impacts from hazardous materials and wastes. Use of these substances would cease after the proposed construction activities. Future use of hazardous materials and wastes for planned development on Dover AFB would be handled and disposed of according to applicable federal, state, and local regulations.

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5.0 LIST OF PREPARERS

Name/Title	Expertise/Experience	Involvement
Dana Banwart *NEPA Project Manager* *Air Quality Specialist*	NEPA Studies *6 years*	Air Quality, Socioeconomics
Joseph Campo, Ph.D. *Natural Resources Specialist*	Natural Resources Management *26 years*	Biological Resources, Soil and Water Resources
Kurt Hellauer *NEPA Project Manager* *Land Use Specialist*	Land Use Planning/ Airspace Analysis *15 years*	Project Management Land Use, Noise, Hazardous Materials and Transportation
Nicholas Farrar *GIS/Graphics Specialist*	GIS/Graphics *2 years*	GIS/CAD Maps
Elizabeth Pruitt *NEPA Project Manager*	NEPA Studies *8 years*	Technical Editor
Tim Sara *Archeologist*	Archeology *30 years*	Historic or Archeological Resources

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6.0 DISTRIBUTION LIST AND AGENCIES AND INDIVIDUALS CONTACTED

6.1 Distribution of the Draft Environmental Assessment

As part of CEQ regulations (§1503.1), public comments on the Draft EA are invited. This process helps decision makers and the public to understand and have input on the environmental effects of federal actions. This EA was distributed to the Dover Public Library (302/736-7030; 45 S. State St. Dover, DE 19901) for comment during the public review period.

The NEPA and CEQ regulations require that the environmental effects of Proposed Action and alternatives be considered in the decision-making process. Preparation of this EA must precede final decisions regarding the action, and the document must be available to inform decision-makers and the public of potential environmental consequences/impacts. Therefore, public notice of this EA has been provided in the Delaware State News (Appendix A). Additionally, two site visits were conducted to gather information from installation personnel and record field observations on existing conditions.

Dover AFB has coordinated with Mr. Kevin E. Faust, Philadelphia District, U. S Army Corps of Engineers, regarding wetland permitting requirements. A Nationwide Permit would be authorized for the Proposed Action.

6.2 Comments and Responses to Comments

Comments received from federal agencies and/or members of the public during the public comment period were to be incorporated in the Final EA. No public comments were received.

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APPENDIX A - Regulatory Coordination

Notice of Availability

DNREC, Coordination Letter

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ENVIRONMENTAL ASSESSMENT FOR MEDICAL FACILITY PARKING COMPLEX AT DOVER AIR FORCE BASE (AFB), DELAWARE

Pursuant to the Council on Environmental Quality regulations implementing procedural provisions of the National Environmental Policy Act, the Department of the Air Force gives notice that an Environmental Assessment (EA) has been prepared for a proposal to construct additional parking spaces, new access roads, exterior security lighting, and sidewalks for the Medical Group Campus Plan that incorporates a Medical Facility Parking Complex at Dover AFB, Delaware. A Finding of No Significant Impact and Finding of No Practicable Alternative may result from this EA, and if signed, indicates that no significant impacts to the environment are expected from the proposed action and therefore an Environmental Impact Statement would not be required or prepared.

A copy of the document is also available for public inspection at the Dover Public Library during normal business hours. Comments may be submitted in writing no later than August 25, 2006 to Mr. Charles Mikula, 436 CES/CEV, 600 Chevron Avenue, Dover AFB, DE 19902-5600. All comments received prior to August 25, 2006 will be considered in the final decision.

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL
DIVISION OF FISH & WILDLIFE
NATURAL HERITAGE & ENDANGERED SPECIES
4876 HAY POINT LANDING ROAD
SMYRNA, DELAWARE 19977
TELEPHONE: (302) 653-2
FAX: (302) 653-3

July 25, 2005

Rayanne Benner
436 CES/CEV
600 Chevron Ave, Dover AFB DE 19902

RE: Federally listed species at the Dover Air Force Base

Dear Ms. Benner:

Thank you for contacting the Natural Heritage and Endangered Species program about information pertaining to the potential for federally listed rare, threatened and endangered species to occur at the Dover Air Force Base.

Plants:

Below is a list of plant species found in Delaware that are either listed as endangered, threatened, or a candidate by the U.S. Fish and Wildlife Service. These species are very habitat specific and require specialized and unique environmental conditions. Based on past surveys, these conditions have never been found to exist within the boundaries of the Dover Air Force Base, and are likely never too be found. Therefore, new surveys for these species at the Dover Air Force Base are not necessary. Full descriptions of the habitat needs for these species are available upon request. If you have any questions regarding rare plants, please contact our program botanist Bill McAvoy at (302) 653-2880.

Federally Listed and Candidate Plant Species Occurring in the State of Delaware

Scientific Name	Common Name	State Rank	State Status	Global Rank	Federal Status
Oxypolis canbyi	Canby's dropwort	SH		G2	LE
Schwalbea Americana	American chaffseed	SX		G2	LE
Aeschynomene virginica	sensitive jointvetch	SX		G2	LT
Amaranthus pumilis	seabeach amaranth	S1		G2	LT
Helonias bullata	swamp pink	S2		G3	LT
Isotria medeoloides	small whorled pogonia	S1		G2G3	LT

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Rhynchospora knieskernii	Knieskern's beakrush	SX		G1	LT
Narthecium americanum	bog asphodel	SX		G2	Candidate
Dichanthelium hirstii	Hirst's panic grass	S1		G1	Candidate

State Rank: S1- extremely rare within the state (typically 5 or fewer occurrences); S2- very rare within the state (6 to 20 occurrences); B - Breeding; N - Nonbreeding; SX-Extirpated or presumed extirpated from the state. All historical locations and/or potential habitat have been surveyed; SH- Historically known, but not verified for an extended period (usually 15+ years); there are expectations that the species may be rediscovered; SE-Non-native in the state (introduced through human influence); not a part of the native flora or fauna.
State Status: E – endangered, i.e. designated by the Delaware Division of Fish and Wildlife as seriously threatened with extinction in the state;
Global Rank: G1 - imperiled globally because of extreme rarity (5 or fewer occurrences worldwide); G2 - imperiled globally because of great rarity (6 to 20 occurrences); G3 - either very rare and local throughout its range (21 to 100 occurrences) or found only locally in a restricted range; G4 - apparently secure globally but uncommon in parts of its range; G5 - secure on a global basis but may be uncommon locally; T_ - variety or subspecies rank; Q – questionable taxonomy;
Federal Status: LE – endangered, i.e. designated by the U.S. Fish and Wildlife Service as being in danger of extinction throughout its range; LT – threatened, i.e. designated by USFWS as being likely to become endangered in the foreseeable future throughout all or a significant portion of its range; Candidate – Taxa for which the U.S. Fish and Wildlife Service has on file enough substantial information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened species.

Bald Eagle (*Haliaeetus leucocephalus*)
Federal Status-PS:LT, State status-E, State Rank-S2B/S3N, Global Rank-G4, :

Aerial surveys for Bald Eagle are conducted annually and there are currently no nests located on Dover Air Force Base property. The closest nest is located adjacent to the St. Jones River across Rt. 1. The trees on the extreme west side of the base bordering the east bank of the St. Jones River may be utilized for foraging or roosting.

Piping Plover (*Charadrius melodus*)
Federal Status-LE, State Status-E, State Rank-S1B, Global Rank-G3

This rare bird species typically use open, sandy, ocean beaches to nest and forage. No such habitat is present at Dover Air force Base.

Delmarva Fox Squirrel (*Sciurus niger cinerus*)
Federal Status-LE, State Status-E, State Rank-S1, Global Rank-G5T3

Delmarva fox squirrels are tree squirrels that thrive in mature hardwood, pine and mixed forests with closed canopies and open understories. They were once thought to be extirpated from Delaware and are only currently documented in three Delaware locations; Prime Hook National Wildlife Refuge (reintroduced population), Nanticoke Wildlife Area (likely natural expansion of Maryland population) and Assawoman Wildlife Area (reintroduced population). Due to the location of the Dover Air Force Base and lack of habitat on site, Delmarva fox squirrels are not likely to occur at the base.

Bog Turtle (*Glyptemys muhlenbergii*)
Federal Status-LT, State Status-E, State Rank-S1, Global Rank-G3

Bog turtles generally inhabit freshwater wetlands with open canopies, shallow running water, and pockets of deeper water and dry areas. Favorable habitats are usually small and bordered by vegetated or wooded areas. Most occupied bog turtle habitats include soft-bottomed substrate with muck a least a couple inches deep. Pedestal vegetation such

as tussock sedges (*Carex stricta*) are usually present and provide cover and oviposition sites. Dover Air force Base is approximately 15 miles south of the southernmost bog turtle record in Delaware. Therefore, the likelihood of bog turtles occupying wetlands on the base is minimal.

Dwarf Wedgemussel (*Alasmidonta heterodon*)
Federal Status-LE, State Status-E, State Rank-SH, Global Rank-G1G2

This rare freshwater mussel typically inhabits flowing freshwater streams and this type of aquatic habitat is not present at the Dover Air Force Base.

Federally Listed Fish, Marine Mammals and Sea Turtles:

None of these species occur at the Dover AFB as there is no suitable marine or estuarine aquatic habitat.

If you have any questions, please contact me at (302) 653-2883 ext. 126.

Sincerely,
Edna J. Stetzar
Edna J. Stetzar
Biologist/Environmental Review Coordinator